

**REMARKS**

Claims 1-4 and 9 are pending in this application. Claims 5-8 have been canceled without prejudice or disclaimer herein. No new matter has been added by this amendment.

**Claims 1, 3-5 and 7-9 are rejected under 35 U.S.C. 102(c) as anticipated by Fryd et al. (U.S. Pat. No. 6,262,152) (Office action point 2).**

The rejection of claims 5 and 7-8 is moot in view of the cancellation of these claims without prejudice or disclaimer. The rejection of pending claims 1, 3, 4 and 9 is respectfully traversed.

The rejection of claims 1, 3 and 9 is traversed by perfection of the claim for foreign priority in this application. A verified translation of JP 104417/1998 is attached to this Amendment to perfect that claim for priority. Applicants first note that Fryd et al.'152 itself is not a reference under 35 U.S.C. 102(e) as of its filing date of June 29, 1999, because the present application has an international filing date of April 12, 1999. However, Fryd et al. claims benefit of a provisional application 60/103,194 (filed October 6, 1998), no copy of which has been provided in the Office action and which has not been reviewed by Applicants for support of the rejection over Fryd et al. The priority application of which benefit is claimed for the present application, Japanese Patent Application No. 104417/1998, was filed on April 15, 1998, before the filing date of Fryd et al. (June 29, 1999) and before the filing date of provisional application 60/103,194 (October 6, 1998). The perfection of the claim for foreign priority therefore addresses the potential rejection over the disclosure in the Fryd et al. provisional application.

Support for claims 1, 3 and 9 in JP 104417/1998 may be found as follows. The text of lines 1-9 of claim 1 of the present application (as of the preliminary amendment of May 10, 2002, may be seen to be almost identical to claim 1 of the priority application, and this portion of claim 1 also finds support in the verified translation at the bottom of page 6 to the top of page 7. Claim 1 of the present application recites an additional limitation (lines 10-13) regarding the ratio of the cross-linking agent to the thermoplastic resin containing the carboxylic group. This limitation may be seen to be disclosed in the verified translation on page 18, lines 3-9.

Claim 3 of the present application depends from claim 1 and therefore includes the limitations of claim 1, indicated above to be supported by the priority application. Claim 3 also recites an additional limitation on the cross-linking agent. Support for this limitation may be found in the verified translation on page 7 and on page 17, bottom paragraph.

Claim 9 of the present application depends from claim 1 and therefore includes the limitations of claim 1, indicated above to be supported by the priority application. Support for the recitation of an ink containing the recited dispersion may be found on page 4, line 7, of the verified translation.

The rejection of claim 4 is traversed on the following grounds. Applicants note that the Examiner states that a cross-linking agent such as a polymer or oligomer with acryloyl group is used in Fryd et al. However, Fryd et al. does not disclose a cross-linking agent with acryloyl group (please see Table 1 in Fryd et al.). That is, Fryd et al. does not disclose the recited cross-linking agent, and claim 4 is not anticipated by Fryd et al.

Moreover, a pigment dispersion obtained according to claim 4 has excellent properties

compared with a pigment dispersion obtained in Fryd et al. due to a cross-linking agent with acryloyl group used in claim 4. The experimental results in the Declaration under 37 CFR 1.132 by WAKI, attached hereto, clearly demonstrate that a pigment dispersion obtained according to claim 4 has excellent properties (stability during the passage of time estimated viscosity of the dispersion) compared with a dispersion obtained by using m-tetramethylxylene diisocyanate crosslinker in Fryd et al.

Applicants therefore assert that pending claims 1, 3, 4 and 9 are not anticipated by, and further are non-obvious over Fryd et al.

**Claims 1, 5 and 8 are rejected under 35 U.S.C. 102(b) as anticipated by Jakubauskas (U.S. Patent No. 3,980,602) (Office action point 3).**

The rejection of claims 5 and 8 is moot in view of the cancellation of claims 5 and 8 without prejudice or disclaimer. The rejection of claim 1 is respectfully traversed.

The present invention is characterized in that a pigment is dispersed with a thermoplastic resin containing carboxylic group, that the thermoplastic resin is cross-linked with a cross-linking agent after the pigment is dispersed, and that the ratio of the cross-linking to the thermoplastic resin (weight ratio of effective solid matter) is 1/100 to 50/100.

In the present invention, the thermoplastic resin is cross-linked so that a dispersion containing a pigment and a cross-linked thermoplastic resin can be obtained (please see the specification, page 19, line 5 to 7). The resin is cured maintaining function as a dispersant and giving stability to the dispersion without absorption and aggregation of pigment particles with each other in a water-based

system (please see the specification, page 16, lines 22-25).

In general, by means that a carboxylic group-containing thermoplastic resin used for coating material or printing ink are cured, for example, in a process in which moisture, solvents and organic amines scatter with heating, and functional groups start the curing reaction at the same time; and in a process in which moisture, solvents and organic amines scatter with heating, and polymerization curing occurs based on a radical source such as organic amines at the same time. In the means for these, cross-linking proceeds in three dimensions to form a strong film (please see the specification, page 16, lines 13-21). However, these curing reactions occur merely to form a film after coating material or printing ink is coated on a substrate in both processes.

Jakubauskas mentions that a coating film is obtained by prebaking and baking a paint containing aqueous acrylic polymer composition (carboxylic group-containing thermoplastic resin), hexamethoxymethylmelamine (cross-linking agent) and pigment after spraying the paint into primed steel panels (please see Jakubauskas, Col. 7, lines 17-19).

Hexamethoxymethylmelamine used as a cross-linking agent in Jakubauskas is a well-known cross-linking agent to form a strong film after coating material is coated on a substrate. Accordingly, the present invention wherein a cross-linking reaction proceeds maintaining a state of a dispersion is technically different from the invention described in Jakubauskas wherein a coating film is formed by a cross-linking reaction, and the present invention is not suggested by Jakubauskas.

Accordingly, claim 1 is not anticipated by Jakubauskas.

**Claim 2 is rejected under 35 U.S.C. 103(a) as unpatentable over Fryd et al. (U.S. Pat. No. 6,262,152) in view of either Suga et al. (U.S. Patent No. 5,604,276) or Satake et al. (U.S.**

Amendment under 37 CFR 1.111  
Minoru WAKI

U.S. Patent Application Serial No. 09/673,194  
Attorney Docket No. 001350

**Patent No. 5,814,685) (Office action point 5).**

Claim 2 depends from claim 1 and contains the limitations of claim 1. As discussed above, the limitations of claim 1 are fully described in Japanese Patent Application No. 104417/1998, for which priority has been perfected, and which antedates the provisional application from which Fryd et al. claims benefit. Claim 2 further recites limitations which are found in claims 2 and 3 of the priority application, and therefore claim 2 is fully supported by the priority application. Accordingly, Fryd et al. cannot be applied as a reference against present claim 2.

Applicants assert that Suga et al. and Satake et al. do not disclose the limitations of present claim 2, and no *prima facie* case of obviousness can be made using these two references. Accordingly, claim 2 is novel and non-obvious over the cited references.

**Claim 6 is rejected under 35 U.S.C. 103(a) as unpatentable over Fryd et al. (U.S. Pat. No. 6,262,152) or Jakubauskas (U.S. Patent No. 3,980,602), either of which in view of Tsuruoka et al. (U.S. Patent No. 5,444,118) (Office action point 6).**

The rejection is moot in view of the cancellation of claim 6 without prejudice or disclaimer.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.


Amendment under 37 CFR 1.111  
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In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

Enclosures: Verified Translation of JP 1998/104417  
Declaration under 37 CFR 1.132

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